AMPLIFIER RESEARCH

OPERATING AND SERVICE MANUAL

MODEL

10W1000

PART NO.

1001214-501

SERIAL NO.

10W1000
1863

MAY 6 1980
ID 180-166
C 4529

AMPLIFIER RESEARCH

SOUDERTON, PA. 18964

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SECTION I
GENERAL INFORMATION

1.1 GENERAL DESCRIPTION

The Model 10W1000 Amplifier is a self-contained broadband unit designed for laboratory applications where instantaneous bandwidth, high gain, and moderate power output are required. Solid state technology is used exclusively to offer significant advantages in reliability and cost. A Model 10W1000 used with a frequency swept signal source will provide 10 watts of linear swept power output from 1-900 MHz, or 8 watts from 900-1000 MHz. Typical applications include antenna and component testing, wattmeter calibration, EMI susceptibility testing, use as a driver for frequency multipliers and high power amplifiers and as an RF source for nuclear magnetic resonance studies.

1.2 POWER SUPPLIES

This unit has a self-contained 115/230 VAC, 50/60 Hz, regulated power supply. The power consumption is a nominal 400 watts. Primary circuit fusing is provided.

1.3 SPECIFICATIONS

POWER OUTPUT, Maximum	Up to 14 watts
POWER OUTPUT, Linear (Into 50 ohms @ less than 1.0 dB Compression)	
1-900 MHz	10.0 watts
900-1000 MHz	8.0 watts
FREQUENCY RESPONSE	1 to 1000 MHz instantaneously
FLATNESS	±1.5 dB maximum ±1.0 dB typical
POWER GAIN	40 dB minimum
INPUT IMPEDANCE	50 ohms, VSWR 2:1 maximum
OUTPUT IMPEDANCE	50 ohms nominal
REVERSE ISOLATION	Greater than 45 dB
HARMONIC DISTORTION	Not less than 20 dB below fundamental at 10 watt output
INTERMODULATION DISTORTION	Third order intercept point 50 dBm, typical
MISMATCH TOLERANCE	Unconditionally stable; will operate without damage or oscillation with any magnitude and phase of source and load impedance
PRIMARY POWER, LAB	115/230 VAC, 50/60 Hz, 400 Watts
CONNECTORS	Type N Female
WEIGHT, LAB	63 lb.
SIZE, LAB (W x H x D)	19.8 in x 8.0 in x 18.0 in 50.0 cm x 20.3 cm x 45.7 cm

SECTION II

OPERATING INSTRUCTIONS

2.1 GENERAL

Operation of the Model 10W1000 broadband amplifier is quite simple. The input signal, whether swept or fixed in frequency, is fed into the jack marked INPUT and the amplifier output signal is taken from the jack labeled OUTPUT. The unit is turned on by activating the power switch marked OFF, ON. In the event of a unit malfunction, protection is provided by fusing located at the rear of the unit. A polarized, three (3) wire AC power cord is also included with the unit to provide cabinet and chassis grounding to the power mains.

> CAUTION
> THE MODEL 10W1000 AMPLIFIER IS NOT CRITICAL IN REGARDS TO SOURCE AND LOAD VSWR AND WILL REMAIN UNCONDITIONALLY STABLE WITH ANY MAGNITUDE AND PHASE OF SOURCE AND LOAD VSWR. IT ALSO HAS BEEN DESIGNED TO WITHSTAND, WITHOUT DAMAGE, RF INPUT POWER UP TO TWENTY (20) TIMES ITS RATED INPUT OF 1 mW: HOWEVER, SIGNAL LEVELS HIGHER THAN 20 mW OR TRANSIENTS WITH HIGH PEAK VOLTAGES CAN DAMAGE THE AMPLIFIER. ALSO, ACCIDENTAL CONNECTION OF THE 10W1000 OUTPUT TO THE INPUT CAUSES OSCILLATIONS WHICH WILL PERMANENTLY DAMAGE THE INPUT TRANSISTOR. INTERNAL CROWBAR PROTECTION IS DESIGNED INTO THE AMPLIFIER TO PROTECT AGAINST INPUT OVERDRIVE.

The amplifier is protected by a fast action Crowbar. The Crowbar may be activated by an Input Signal greater than 0 dBm which will cause the +28V Power Supply to turn off. The Crowbar operation will turn on the red Overload light located on the front panel, indicating an overload condition. To reset the Crowbar, reduce the input RF to -3 dBm and push the red reset switch (S3) located under the Overload light on the front panel.

2.2 AMPLIFIER OPERATION

Figure 2.1 shows the Model 10W1000 Amplifier in pictorial form.

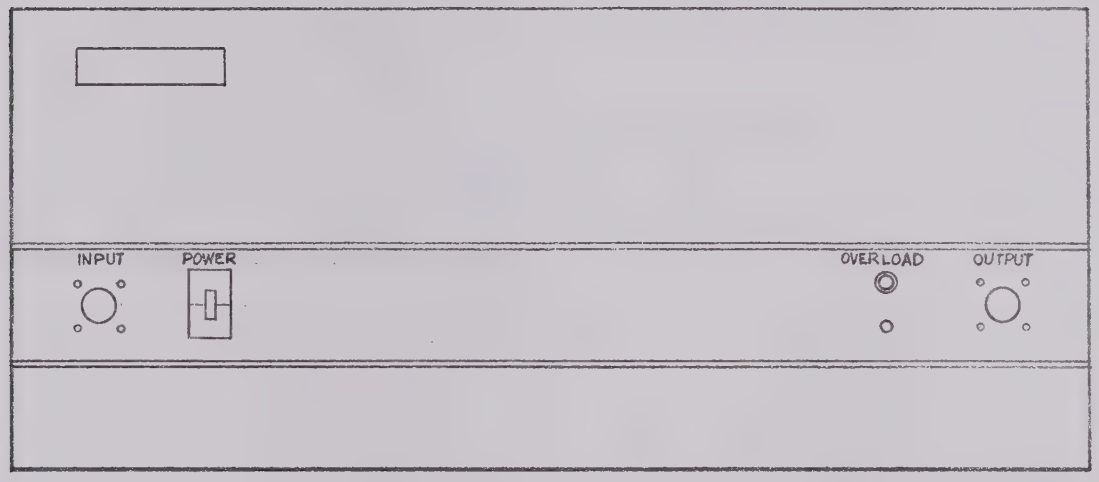

FIGURE 2.1

AMPLIFIER OPERATION

Turn On Sequence:

1. Connect input signal to INPUT connector.
2. Connect load to OUTPUT connector.
3. Select either 115/230 VAC operation by means of switch located on rear of unit.
4. Activate power switch to ON position. A red indicator light mounted within the switch will light when power is applied.

CAUTION: DO NOT CONNECT UNIT TO 230 VAC MEASURED LINE TO LINE. TO DO SO WOULD RESULT IN ONE SIDE OF THE LINE NOT BEING FUSED, CREATING A HAZARDOUS SITUATION. THE 230 VAC FEATURE IS DESIGNED PRIMARILY FOR USE IN COUNTRIES HAVING 230 VAC MEASURED LINE TO NEUTRAL.

SECTION III

THEORY OF OPERATION

3.1 INTRODUCTION

Refer to Block Diagram No. 1001211.

The input signal to the amplifier is connected through directional coupler (A3A4) and gain equalizer (A3A5) to J1 of low level/driver amplifier (A1). A1 consists of low level amplifier (A1A1) and driver amplifier (A1A2). The gain of A1 is 36 dB minimum.

The output of A1 drives the input of final amplifier (A2), where the input signal is split by A2A5 into four equal signals and drives power amplifiers A2A1, A2A2, A2A3 and A2A4. Their outputs are combined together by power combiner A2A6 and drives the 10 watt RF output. The gain of final amplifier A2 is 4 dB minimum.

The RF portion of power amplifiers A2A1, A2A2, A2A3 and A2A4 is identical to driver amplifier A1A2 and will be explained.

The low level/driver Amplifier A1 consists essentially of seven (7) cascaded stages of broadband transistor amplifiers which yield a total power gain greater than 36 dB. Input and output matching networks are utilized to provide optimum power transfer of the signal to and from the amplifier with a 50 ohm source and load impedance. Intra-stage feedback is also used to further flatten the frequency response and bias stabilization of the individual stages is provided.

The self-contained power supply employs a full wave rectifier, two (2) integrated circuit regulators to provide stable, low ripple, regulated output voltages.

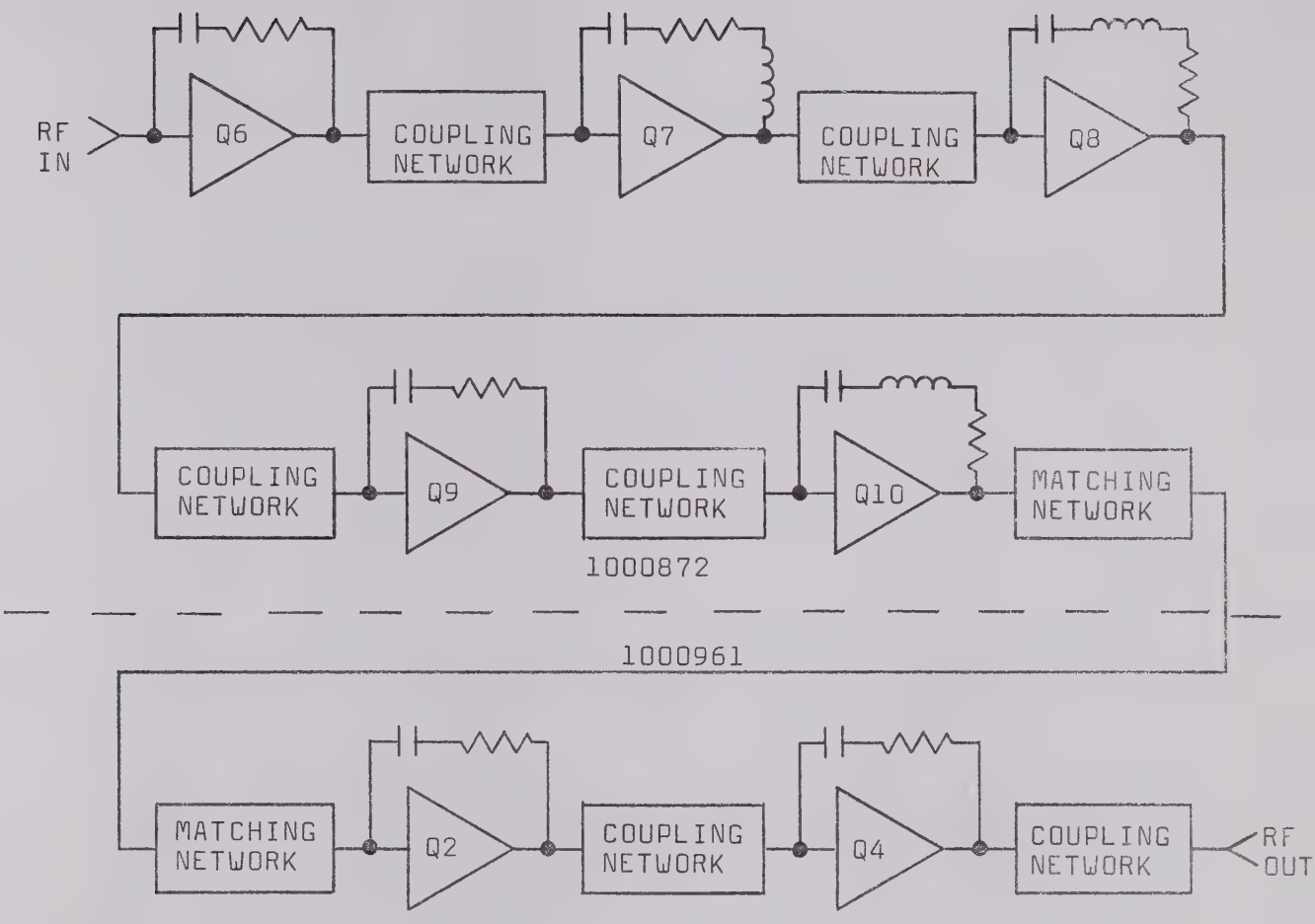

FIGURE 3.1 BLOCK DIAGRAM

3.2 AMPLIFIER OPERATION

Refer to Schematic Diagrams No. 1000872, 1000961

The input signal to the amplifier is fed from the input connector through a matching network to the base of the first transistor amplifier stage. The component values in this network are chosen to effect a compromise between obtaining the best VSWR and the lowest insertion loss.

The first stage is connected in the common emitter mode with the emitter connected to ground through two resistors. This configuration allows the selection of the emitter resistors to achieve the desired stage gain. The collector voltage (+) is supplied to this stage from the transistor immediately above it (refer to diagram No. 1000872). This allows the RF transistor to operate at a constant DC current and provides a high degree of protection since the transistor current is independent of overdrive and/or short circuits. Temperature dependence is also avoided. The required decoupling and bypassing of the possitive supply is provided by ferrite beads and capacitors.

A coupling network is used to route the output of the first stage to the base of the second stage. The first five stages are coupled in substantially the same manner with the fifth stage matched to a 50 ohm output impedance.

The output of the fifth stage (refer to diagram No. 1000961) is applied through an input matching network to the first stage of the 2 stage output amplifier. The output of the first stage is transformer coupled to the last stage. The output of the last stage is transformer coupled to the output, which has a 50 ohm impedance.

3.3 POWER SUPPLY SECTION

Refer to Schematic Diagrams No. 1001208.

Input AC power is fed through RFI filter FL1 before being switched by the main power switch, S1. The AC power indicator is an integral part of S1. S2 serves to select the primary tap configuration of T1 for operation on either 115 or 230 VAC.

CAUTION

DO NOT CONNECT UNIT TO 230 VAC MEASURED LINE TO LINE. TO DO SO WOULD RESULT IN ONE SIDE OF THE LINE NOT BEING FUSED, CREATING A HAZARDOUS SITUATION. THE 230 VAC FEATURE IS DESIGNED PRIMARILY FOR USE IN COUNTRIES HAVING 230 VAC MEASURED LINE TO NEUTRAL.

The power supply utilizes a full wave rectifier on A1 and A3 assemblies. DC output from the rectifiers is filtered by C1. A1 supplied regulated +VDC to the low level amplifier (A1A1) and A3 supplies regulated +VDC to the driver amplifier (A1A2). Both A1 and A3 supply +VDC to the protection circuit assemble, A2.

3.3.1 Regulator MPLV

Refer to Schematic Diagram No. 1001098.

The full wave rectifier consists of CR1 and CR2. Capacitors C1 and C2 are connected in parallel across the rectifiers to suppress transients caused by the reverse recovery of the diodes. The filtered DC output from the rectifiers pass thru the series regulator U1. U1 is a linear integrated circuit with adjustable output current and voltage. R2 adjusts the output current and R3 adjusts the output voltage. U1 also contains power limiting, thermal shutdown and input overvoltage protection.

The overload light DS2 is located on the front panel and will light when regulated VDC approaches zero. A crowbar will cause DS2 to light and must be reset to restore proper operation. To reset the crowbar reduce the input to -3 dBm and push the red switch (S3) located under the overload light on the front panel.

3.3.2 Protection Circuit

Refer to Schematic Diagram No. 1001132.

The protection circuit consists of a D.C. amplifier U1 with its bias circuit and an SCR crowbar, Q2. The input signal at E2 originates from a peak detector which, detects the RF input level and delivers an equivalent DC potential to the DC amplifier. The input signal is amplified to the desired level. R15 adjusts the threshold setting which turns ON Q2. With Q2 turned ON, the +28VDC at E5 is pulled close to ground and the A3 regulator output is near zero thus removing the DC power to the driver amplifier (A1A2). Holding current is supplied to E1 from the A1 +28V regulator, thru R8 and CR2 to Q2 anode. Thus when Q2 turns ON it stays ON until the RF amplifier is reset. To reset reduce the input RF to -3 dBm and push the red switch (S3) located on the front panel.

SECTION IV
MAINTENANCE

4.1 GENERAL MAINTENANCE INFORMATION

The Model 10W1000 should require very little maintenance since it is a relatively simple instrument. It is built with etched circuit wiring and solid state devices which should ensure long, trouble-free life. However, should trouble occur special care must be taken in servicing to avoid damage to the devices or the etched circuit board.

Since the components are soldered in place, substitution of components should not be resorted to unless there is some indication that they are faulty. In addition, take care when troubleshooting not to short voltages across the amplifier. Small bias changes may ruin the amplifier due to excessive dissipation or transients.

Components within Amplifier Research instruments are conservatively operated to provide maximum instrument reliability. In spite of this, parts within an instrument may fail. Usually, the instrument must be immediately repaired with a minimum of "down time". A systematic approach can greatly simplify and thereby speed up the repair.

However, due to the importance of the amplifier's alignment, it is recommended that when failure is caused by breakdown of any of the components in the signal circuits, the amplifier be returned to the factory for part replacement and amplifier realignment. Shipping instructions are as follows: Ship PREPAID via United Parcel Service to Amplifier Research Corporation, 160 School House Road, Souderton, PA 18964.

4.2 COVERS AND CIRCUIT BOARD REMOVAL

CAUTION: REMOVE POWER CORD FROM RECEPTACLE BEFORE SERVICING.

4.2.1 Remove top cover by removing the screws.

4.2.2 Remove circuit board and heatsink by removing the screws around the perimeter of the heatsink.

4.2.3 Remove bottom cover by removing the screws.

4.2.4 Remove circuit board and heatsink by removing the screws at each end of the heatsink.

4.3 TROUBLESHOOTING

The techniques used in troubleshooting solid state instruments are similar to those used in vacuum tube instruments. For instance, a good way to start troubleshooting is to check the supply voltage at the amplifier supply voltage terminal. If it is low or nonexistent check the power supply components starting with the AC fuse.

The power supply output voltage should be nominally +28 volts. Incorrect voltage could result in over dissipation of the transistors or severe distortion and non-linearity of the amplifier. The power supply may be disconnected from the RF board to enable troubleshooting without danger of damaging the RF board. The amplifier board should be removed (Section 4.2) and the power supply output connected to an external load resistor to simulate the amplifier load.

Finally, determine if the individual amplifier stages are operational by injecting a signal into the transistor base and looking for an indication of output.

4.4 SERVICING ETCHED CIRCUIT BOARDS

When soldering leads, use a hot forty watt or smaller iron. Apply heat sparingly to the leads, not to the printed wiring on the board. Before installing new parts clean holes to receive new part without forcing. Have new leads tinned to receive solder quickly with a minimum of heat and without residue.

SECTION V

REPLACEABLE PARTS

5.1 INTRODUCTION

This section contains information to ordering replacement parts. The following parts list show the parts in alphanumeric order of their reference designators and indicate the description; and, together with any applicable notes, provide the following:

a. Description of the part.

b. Manufacturer's part number.

c. Typical manufacturer of the part.

Miscellaneous parts are listed at the end of the parts list.

5.2 ORDERING INFORMATION

To obtain replacement parts, address order to Amplifier Research, 160 School House Road, Souderton, PA 18964. Identify and include instrument model and serial numbers.

5.3 NONLISTED PARTS

To obtain a part that is not listed, include:

a. Instrument model number.

b. Instrument serial number.

c. Description of the part.

d. Function and location of the part.

5.4 REFERENCE DESIGNATORS

A = assembly
B = fan
BT = battery
C = capacitor
CR = diode
DS = lamp
E = terminal
F = fuse
IC = integrated circuit
J = jack
K = relay
L = inductor
M = meter
TP = test point
P = plug
Q = transistor
R = resistor
S = switch
T = transformer
V = vacuum tube, neon bulb, photocell, etc.
X = socket

5.5 PARTS LISTS

See the following sheets for Parts Lists.

ML 1001214-501 MODEL 10W1000

DESCRIPTIVE INFORMATION	SUPPORT DOCUMENTS
FREQUENCY 1-1000 MHz	TEST DATA SHEET 1000992
POWER OUT 10W	TEST PROCEDURE 1001339
PRIMARY POWER 115/230 VAC	ENVELOPE DWG -
COOLING INTERNAL FANS	SALES DATA SHEET INFORMAL PRINTED
PACKAGE 7" CABINET	MANUAL CLASS I (SEE REVERSE SIDE)
OPTIONS INCLUDED	REMARKS

MATERIAL PULL INFORMATION

ASSY LEVEL 1	2	3	4	5	6	7	8	DESCRIPTION	QTY	ASSEMBLY NUMBER	S	MANUAL INFO PL	AS	SC	SCHEMATIC NUMBER	S
X								AMPLIFIER ASSY	1	PL1001214-501		X		X	1001211	B
	X							RF ASSY, FINAL	1	PL1001213-501	C	X		X	1001212	B
		X						RF BRD ASSY	4	PL1000962-504	B	X		X	1000961	B
		X						REGULATOR ASSY	4	PL1001097-504	B	X		X	1001098	B
	X							RF BRD ASSY, LL/DUR	1	PL1000962-505	B				1000961	B
		X						RF BRD ASSY. LL	1	PL1000787-505	B	X		X	1000812	B
	X							PS & HSNG ASSY	1	PL1001209-501		X		X	1001208	B
		X						REGULATOR ASSY	1	PL1001097-502	B				1001098	B
		X						PROT CKT ASSY	1	PL1001134-502	B	X		X	1001132	A
		X						GAIN EQUALIZER	1	PL1000968-501		X		X	1000969	A
		X						DETECTOR ASSY	1	PL1001203-501		X				
		X						REGULATOR ASSY	1	PL1001097-501					1001098	B

FORM 109 REV0378

AMPLIFIER RESEARCH

DATE	R	DATE	R
12 JUL 99	-		
14 Aug 99	A		

MASTER LIST

										1000872	SCHEMATIC	REDRAWN		A	20 [illegible] 76
														B	8 Sep 76
														C	22 Sep 76
														D	28 Nov 77
														E	30 Jun 77
														F	19 Aug 77
														G	18 Nov 77
														H	17 MAR. 78
														J	14 May 78
														K	13 JULY 78
														L	22 DEC. 78
										13	– NOT PART OF MANUAL			M	16 APR. 79
										12	P			N	12 Jun 79
										11	G			P	14 Aug 79
											L			R	26 DEC 79
											K			S	18 JAN 80
											R				
											P				
											R				
											P				
										4	S				
											G				
											S				
											S				
											[illegible]				
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															

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	TITLE [illegible]	DWG. NO. [illegible]
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-	-	-	1	-	1	-	1	-	CR1	IN4720	DIODE				AN.
1	-	1	1	1	1	1	-	-	C14	5855-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
1	-	1	1	1	1	1	-	-	C13	5855-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C13	5855-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C12	5855-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C11	5855-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C10	5855-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C9	5855-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C8	5855-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C7	5855-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C6	5855-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	-	1	1	1	1	1	-	-	C5	5855-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C4	5855-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C3	196D685X0035KA1	CAP, FXD, TANT	6.8uF		35V	SPRAGUE
1	1	1	1	1	1	1	1	1	C2	5855-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C1	5855-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															

AMPLIFIER RESEARCH	APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWRoth DATE [illegible]/76
	TITLE RF BOARD ASSY				DWG. NO. PL1000787
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QUANTITY REQUIRED															
1	–	1	1	1	1	1	–	–	C30	5815-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C29	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C28	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C27	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C26	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C25	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	–	1	1	1	1	1	–	–	C24	5815-000Y5U503Z	CAP, FXD, CERAMIC	.05uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C23	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C22	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C21	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C20	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	
1	1	1	1	1	1	1	1	1	C19	5815-000Y5U104Z	CAP, FXD, CERAMIC	0.1uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C18	5815-000Y5U104Z	CAP, FXD, CERAMIC	0.1uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C17	5815-000Y5U104Z	CAP, FXD, CERAMIC	0.1uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C16	5815-000Y5U104Z	CAP, FXD, CERAMIC	0.1uF		25V	ERIE

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TITLE RF BOARD ASSY			

ORIGINATOR DWR DATE 3-31-76

DWG. NO. PL1000787

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509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
1		1	1	1	1	1	1	1	C49	2222-801-96135	CAP. VAR	1-6 pF		400V	MEPCO-ELECTRA
1	1	1	1	1	1	1	1	1	C48	2222-801-96135	CAP. VAR	1-6 pF		400V	MEPCO-ELECTRA
1	1	1	1	1	1	1	1	1	C47	5815-[illegible]	CAP. FXD. CERAMIC	.02uF		25V	ERIE
1	1	1	1	1	1	1	1	1	C46	2222-801-96135	CAP. VAR	1-6 pF		400V	MEPCO-ELECTRA
—	—	1	1	1	1	—	1	—	C45	8895[illegible]	FILTER				AMP
1	—	1	1	1	1	1	—	—	C44	5815-[illegible]	CAP. [illegible] CERAMIC	0.1uF		25V	ERIE
—	—	—	—	—	—	—	—	—	C43		CAP. [illegible]	3.3pF			
1	1	1	1	1	1	1	1	1	C42	2222-801-96135	CAP. VAR	1-6pF		400V	MEPCO-ELECTRA
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1	—	1	1	1	1	1	—	—	C43	2222-801-96135	CAP. VAR	1-6pF		400V	MEPCO-ELECTRA
1	—	1	1	1	1	1	—	—	C51	2222-801-96135	CAP. VAR.	1-6pF		400V	MEPCO-ELECTRA
—	—	1	1	1	—	—	—	—	C50	2222-801-96135	CAP. VAR	1-6 PF		400V	MEPCO-ELECTRA
1	1	1	1	1	1	1	1	1	C40	HTIOMA/218	CAP. VAR	2-18pF			MEPCO-ELECTRA
1	1	1	1	1	1	1	1	1	C39	HTIOMA/550	CAP. VAR	5-50pF			MEPCO-ELECTRA
1	1	1	1	1	1	1	1	1	C38	HTIOKA/218	CAP. VAR	2-18pF			MEPCO-ELECTRA
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1	—	1	1	1	1	1	—	—	C36	2222-801-96135	CAP. VAR	1-6pF		400V	MEPCO-ELECTRA
1	1	1	1	1	1	1	1	1	C35	2222-801-96135	CAP. VAR	1-6 pF		400V	MEPCO-ELECTRA
1	1	1	1	1	1	1	1	1	C34	2222-801-96135	CAP. VAR	1-6 pF		400V	MEPCO-ELECTRA
1	1	1	1	1	1	1	1	1	C33	2222-801-96135	CAP. VAR	1-6pF		400V	MEPCO-ELECTRA
1	1	1	1	1	1	1	1	1	C32	2222-801-96135	CAP. VAR	1-6pF		400V	MEPCO-ELECTRA
1	—	1	1	1	1	1	—	—	C31	5815-[illegible]5032	CAP. FXD. CERAMIC	.05uF		25	ERIE

AMPLIFIER RESEARCH	APPROVED E.E. / DATE / APPROVED M.E. / DATE	ORIGINATOR DWRoth	DATE 20 Apr 76
	TITLE RF BOARD ASSY	DWG. NO. PL1000187	
		SHEET 4 OF	REV S

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
									L19	2 TURN, 5/16 DIA	AWG 22 MAGNET WIRE				
									L18	NOT USED					R
									L17	NOT USED					R
									L16	NOT USED					
1	—	1	1	1	1	1	—	—	L15	AWG 22 BUS WIRE	3/8 IN HAIRPIN				
1	1	1	1	1	1	1	1	1	L14	AWG 22 BUS WIRE	3/8 IN HAIRPIN				
1	1	1	1	1	1	1	1	1	L13	AWG 22 BUS WIRE	3/8 IN HAIRPIN				
1	1	1	1	1	1	1	1	1	L12	AWG 22 BUS WIRE	3/8 IN HAIRPIN				
1	1	1	1	1	1	1	1	1	L11	.010 x .100 STRAP	SHORT AS POSSIBLE				
—	—	1	1	1	—	—	—	—	L22	012-04-04R0-A03-26-2	INDUCTOR, AIR				
—	—	1	1	1	—	—	—	—	L21	012-04-04R0-A03-26-2	INDUCTOR, AIR				
—	—	1	1	1	—	—	—	—	L20	012-04-04R0-A03-26-2	INDUCTOR, AIR				
1	1	1	1	1	1	1	1	1	L10	3/8 IN HAIRPIN IN	LEAD OF C25				
1	—	1	1	1	1	1	—	—	L9	2 TURN, 3/16 DIA IN	LEAD OF R25				
1	1	1	1	1	1	1	1	1	L8	2 TURN, 3/16 DIA IN	LEAD OF R23				
1	1	1	1	1	1	1	1	1	L7	1 TURN, 3/16 DIA IN	LEAD OF R22				
1	—	1	1	1	1	1	—	—	L6	023-623-05-26-1-1	INDUCTOR, TOROID				
1	—	1	1	1	1	1	—	—	L5	023-623-05-26-1-1	INDUCTOR, TOROID				
1	1	1	1	1	1	1	1	1	L4	023-623-07-26-1-1	INDUCTOR, TOROID				
1	1	1	1	1	1	1	1	1	L3	023-623-07-26-1-1	INDUCTOR, TOROID				
1	1	1	1	1	1	1	1	1	L2	023-623-07-26-1-1	INDUCTOR, TOROID				
1	1	1	1	1	1	1	1	1	L1	023-623-07-26-1-1	INDUCTOR, TOROID				

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE RF BOARD			

ORIGINATOR	DATE 20 Apr 76
DWG. NO.	PL1000783
SHEET 5 OF	REV P

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
-	-	1	-	1	-	-	-	-	J1	1000643-101	FERRITE CORE				R
1	1	-	-	1	-	1	-	1	↑	1000643-622	FERRITE CORE				R
-	-	-	-	9"	-	-	-	-		LST-125	LOSSY LINE				CAPCON
9"	9"	9"	-	9"	-	9"	-	9"		RG188A/U	CABLE, COAX				ANY
-	-	1	-	1	-	-	-	-		KC-59-152	CONN, COAX	BNC			KINGS
1	1	-	-	-	-	-	-	-		N-F-21	CONN, COAX	N			COMPONENT ENTERPRISES
-	-	-	1	-	1	-	1	-	↓	UG290/U	CONN, COAX	BNC			ANY
-	-	-	-	-	-	1	-	1	J1	KC-19-288	CONN, COAX	BNC			KINGS

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE RF BOARD ASSY			

ORIGINATOR DWROTH	DATE 10 AUG 79
DWG. NO. PL1000787	
SHEET 6 OF	REV R

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
1	1	1	–	1	–	1	–	1	J2	1000643-622	FERRITE CORE				AR
9"	9"	AR	AR	6"	–	9"	–	9"		RG188A/U	CABLE, COAX				ANY
1	1	–	–	–	–	–	–	–		N-F-21	CONN. COAX	N			COMPONENT ENTERPRISES
–	–	–	–	–	1	–	1	–		UG290/U	CONN, COAX	BNC			ANY
–	–	–	–	–	–	1	–	1	J2	KC-19-288	CONN, COAX	BNC			KINGS

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE RF BOARD ASSY			

ORIGINATOR DWROTH	DATE 10 AUG 77
DWG. NO. PL1000787	
SHEET 7 OF	REV P

500	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
1	–	1	1	1	1	1	–	–	Q10	1000039-130	TRANSISTOR				ANY
1	1	1	1	1	1	1	1	1	Q9	1000034-130	TRANSISTOR				ANY
1	1	1	1	1	1	1	1	1	Q8	1000031-126	TRANSISTOR				ANY
1	1	1	1	1	1	1	1	1	Q7	1000019-126	TRANSISTOR				ANY
1	1	1	1	1	1	1	1	1	Q6	1000011-125	TRANSISTOR				ANY
1	–	1	1	1	1	1	–	–	Q5	2N3906	TRANSISTOR				ANY
1	1	1	1	1	1	1	1	1	Q4	2N3906	TRANSISTOR				ANY
1	1	1	1	1	1	1	1	1	Q3	2N3906	TRANSISTOR				ANY
1	1	1	1	1	1	1	1	1	Q2	2N3906	TRANSISTOR				ANY
1	1	1	1	1	1	1	1	1	Q1	2N3906	TRANSISTOR				ANY
1	1	–	–	1	–	1	–	1	J3	450-3286-003	PIN SOCKET				CAMBION

AMPLIFIER RESEARCH	APPROVED E.E. / DATE / APPROVED M.E. / DATE	ORIGINATOR DWRoth	DATE 20 Apr 76
	TITLE RF BOARD ASSY	DWG. NO. PL100078T	
		SHEET 8 OF	REV R

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
1	1	1	1	1	1	1	1	1	R13		RES, FXD, COMP	2.7K	5%	¼W	
1	1	1	1	1	1	1	1	1	R11		RES, FXD, COMP	2.7K	5%	¼W	
1	1	1	1	1	1	1	1	1	R13		RES, FXD, COMP	2.7K	5%	¼W	
1	—	1	1	1	1	1	—	—	R12		RES, FXD, COMP	10	5%	2W	
—	1	—	—	—	—	—	1	1	R11		RES, FXD, COMP	150	5%	½W	
—	—	—	—	—	—	—	—	—	R8		RES, FXD, COMP	10Ω	5%	2W	
—	—	1	1	1	—	—	—	—	R8		RES, FXD, COMP	33	5%	2W	
—	1	—	—	—	—	—	1	1	R8		RES, FXD, COMP	18	5%	2W	
1	—	1	1	1	1	1	—	—	R10		RES, FXD, COMP	390	5%	¼W	
—	—	—	—	—	—	—	—	—	(7)	NOT USED					
1	—	—	—	—	1	1	—	—	R3		RES, FXD, COMP	39	5%	2W	
1	—	1	1	1	1	1	—	—	R1		RES, FXD, COMP	1.0K	5%	¼W	
1	1	1	1	1	1	1	1	1	R6		RES, FXD, COMP	82	5%	2W	
—	1	—	—	—	—	—	1	1	R7		RES, FXD, COMP	470	5%	¼W	
1	1	1	1	1	1	1	1	1	R5		RES, FXD, COMP	1.5K	5%	¼W	
1	1	1	1	1	1	1	1	1	R4		RES, FXD, COMP	120	5%	1W	
1	1	1	1	1	1	1	1	1	C3		RES, FXD, COMP	1.5K	5%	¼W	
1	1	1	1	1	1	1	1	1	R2		RES, FXD, COMP	270	5%	½W	
1	1	1	1	1	1	1	1	1	R1		RES, FXD, COMP	1.5K	5%	¼W	

MAGNAFLUX RESEARCH	APPROVED E.E.	DATE	APPROVED M.E. / DATE
	TITLE RF [illegible] ASSY		ORIGINATOR DWRoth / DATE 20 Apr [illegible]
			DWG. NO. PL1000787
			SHEET 9 OF REV K

508	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
1	1	1	1	1	1	1	1	1	R30		RES, FXD, COMP	180	5%	¼W	
1	1	1	1	1	1	1	1	1	R29		RES, FXD, COMP	120	5%	¼W	
—	—	1	1	1	1	—	—	—	R28		RES, FXD, COMP	120	5%	¼W	
1	1	1	1	1	1	1	1	1	R27		RES, FXD, COMP	180	5%	¼W	
1	—	1	1	1	1	1	—	—	R26		RES, FXD, COMP	1.0K	5%	¼W	
1	1	—	—	—	—	1	1	1	R28		RES, FXD, COMP	180	5%	¼W	
1	1	1	1	1	1	1	1	1	R25		RES, FXD, COMP	1.0K	5%	¼W	
1	1	1	1	1	1	1	1	1	R24		RES, FXD, COMP	180	5%	¼W	
1	1	1	1	1	1	1	1	1	R23		RES, FXD, COMP	1.5K	5%	¼W	
1	1	1	1	1	1	1	1	1	R22		RES, FXD, COMP	180	5%	¼W	
1	1	1	1	1	1	1	1	1	R21		RES, FXD, COMP	2.7K	5%	¼W	
1	1	1	1	1	1	1	1	1	R20		RES, FXD, COMP	300	5%	¼W	
1	1	1	1	1	1	1	1	1	R19		RES, FXD, COMP	3.3K	5%	½W	
1	—	1	1	1	1	1	—	—	R18		RES, FXD, COMP	2.7K	5%	¼W	
1	1	1	1	1	1	1	1	1	R17		RES, FXD, COMP	2.7K	5%	¼W	
1	1	1	1	1	1	1	1	1	R16		RES, FXD COMP	360	5%	¼W	

AMPLIFIER RESEARCH	APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DW Rota DATE 20 Apr 76
	TITLE PC BOARD ASSY				DWG. NO. PL1000787
					SHEET 10 OF REV L

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
1	1	1	1	1	1	1	1	1	R45		RES, FXD, COMP	18	5%	¼W	
1	1	1	1	1	1	1	1	1	R41		RES, FXD, COMP	18	5%	¼W	
1	1	1	1	1	1	1	1	1	R43		RES, FXD, COMP	18	5%	¼W	
1	1	1	1	1	1	1	1	1	R42		RES, FXD, COMP	1.0K	5%	¼W	
1	1	1	1	1	1	1	1	1	R41		RES, FXD, COMP	6.8	5%	¼W	
1	1	1	1	1	1	1	1	1	R40		RES, FXD, COMP	18	5%	¼W	
1	1	1	1	1	1	1	1	1	R39		RES, FXD, COMP	18	5%	¼W	
1	1	1	1	1	1	1	1	1	R38		RES, FXD, COMP	1.0K	5%	¼W	
1	1	1	1	1	1	1	1	1	R37		RES, FXD, COMP	4.7	5%	¼W	
1	1	1	1	1	1	1	1	1	R36		RES, FXD, COMP	18	5%	¼W	
1	1	1	1	1	1	1	1	1	R35		RES, FXD, COMP	1.0K	5%	¼W	
1	1	1	1	1	1	1	1	1	R34		RES, FXD, COMP	10	5%	¼W	
1	1	1	1	1	1	1	1	1	R33		RES, FXD, COMP	10	5%	¼W	
1	1	1	1	1	1	1	1	1	R32		RES, FXD, COMP	1.0K	5%	¼W	
1	—	1	1	1	1	1	—	—	R31		RES, FXD, COMP	150	5%	¼W	

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWRoth	DATE 20 Apr 76
TITLE				DWG. NO. PL100078	
				SHEET 11 OF	REV G

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
									15						
									14						
									13						
									12						
									11						
									10						
1	1	1	1	1	1	1	1	1	9	1000866-101	PC BOARD				
–	–	–	–	–	1	–	1	–	8	1000104-103	COVER				
–	–	–	–	–	2	–	2	–	7	1000103-101	COVER, END				
–	–	–	–	–	1	–	1	–	6	1000869-101	HEAT SINK				
1	–	–	–	–	–	1	–	1	5	1000868-101	HEAT SINK				
–	–	1	1	1	–	–	–	–	R56		RES, FXD, COMP	91	5%	½W	
–	–	1	1	1	–	–	–	–	R55		RES, FXD, COMP	47	5%	½W	
–	–	1	1	1	–	–	–	–	R54		RES, FXD, COMP	150	5%	¼W	
–	–	1	1	1	–	–	–	–	R53		RES, FXD, COMP	56	5%	½W	
–	–	1	1	1	–	–	–	–	R52		RES, FXD, COMP	100	5%	¼W	
1	1	–	–	–	1	1	1	1	R52		RES, FXD, COMP	120	5%	¼W	
1	–	1	1	1	1	1	–	–	R51		RES, FXD, COMP	27	5%	¼W	
1	–	1	1	1	1	1	–	–	R50		RES, FXD, COMP	27	5%	¼W	
1	–	1	1	1	1	1	–	–	R49		RES, FXD, COMP	12	5%	¼W	
1	–	1	1	1	1	1	–	–	R48		RES, FXD, COMP	22	5%	¼W	
1	–	1	1	1	1	1	–	–	R47		RES, FXD, COMP	22	5%	¼W	
1	–	1	1	1	1	1	–	–	R46		RES, FXD, COMP	1.0K	5%	¼W	

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE RF BOARD ASSY			

ORIGINATOR DWRath	DATE 20 Apr 96
DWG. NO. PL100079	
SHEET 12 OF	REV P

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
					-	REF	REF	REF		1000B1A	SCHEMATIC			A	19 [illegible] 77
					REF	REF	REF	REF		1000961	SCHEMATIC			B	10 [illegible] 77
														C	18 [illegible] 77
														D	23 Dec 77
														E	[illegible] Mar 78
														F	14 May 78
														G	23 May 78
														H	20 [illegible] 78
														J	12 Sep 78
														K	18 Sep 78
														L	19 Oct 78
														M	22 [illegible] 78
														N	12 Jul 79
														P	[illegible] Aug 79
														R	26 Dec 79

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
				1	1	1	1	1	A1C10	2222-801-11035	CAP, VAR	7-35 pF		500V	MICRO-MATIC
				1	1	1	1	1	A1C5	VP12BY333K	CAP, FXD, CERAMIC	.033uF			VITRAMON 5%
				1	1	1	1	1	A1C8	VP12BY333K	CAP, FXD, CERAMIC	.033uF			VITRAMON 5%
				1	1	1	1	1	A2C7	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
				1	1	1	1	1	A2C6	VP12BY333K	CAP, FXD, CERAMIC	.033uF			VITRAMON 5%
				1	1	1	1	1	A2C5	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
				1	1	1	1	1	A2C4	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
				1	1	1	1	1	A2C3	5835-000Y5U203Z	CAP, FXD, CERAMIC	.02uF		25V	ERIE
				1	1	1	1	1	A2C2	5815-000Y50104Z	CAP, FXD, CERAMIC	0.1uF		25V	ERIE
				1	1	1	1	1	A2C1	5815-000Y50104Z	CAP, FXD, CERAMIC	0.1uF		25V	ERIE
				-	-	-	-	-	A1	10-00787-50	RF BOARD (ASSY)				AR
				-	-	-	-	-	1						AR
				1	-	-	-	1	A1						AR

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE			

ORIGINATOR DWRoth	DATE 30Jun77
DWG. NO. PL1000	
SHEET 1 OF	REV R

508	506	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
				1	1	1	1	1	A2C3	5815-000Y5U104Z	CAP, FXD, CERAMIC	0.1μF		25V	ERIE
				1	1	1	1	1	A2C27	5815-000Y5U104Z	CAP, FXD, CERAMIC	0.1μF		25V	ERIE
				1	1	1	1	1	A2C26	FR3-50	FILTER, FEEDTHRU				TEXAS SPECTRUM
				1	1	1	1	1	A2C25	[illegible]	[illegible]	1-6pF		[illegible]	MEPCO-ELECTRA
				1	1	1	1	1	A2C24	[illegible]	[illegible]	1-6pF		[illegible]	[illegible]
				1	1	1	1	1	A2C23	[illegible]	CAP, VAR	1-6 pF		400V	[illegible]
				1	1	1	1	1	A2C22	[illegible]	[illegible]	1-6 pF		[illegible]	[illegible]
				1	1	1	1	1	A2C21	VP12BY333K	CAP, FXD CERAMIC	.033μF			VITRAMON 5
				1	1	1	1	1	A2C20	[illegible]	[illegible]	1-6 pF		[illegible]	[illegible]
				1	1	1	1	1	A2C19	[illegible]	[illegible]	1-6 pF		[illegible]	[illegible]
				1	1	1	1	1	A2C18	[illegible]	[illegible]	1-6 pF		[illegible]	MEPCO-ELECTRA
				1	1	1	1	1	A2C17	[illegible]	[illegible]	1-6 pF		[illegible]	MEPCO-ELECTRA
				1	1	1	1	1	A2C16	[illegible]	[illegible]	1-6 pF		[illegible]	MEPCO-ELECTRA
				1	1	1	1	1	A2C15	[illegible]	CAP, VAR	1-6 pF		[illegible]	[illegible]
				1	1	1	1	1	A2C14	[illegible]	CAP, VAR	1-6 pF		400V	MEPCO-ELECTRA
				1	1	1	1	1	A2C13	[illegible]	CAP, VAR	[illegible]		400V	MEPCO-ELECTRA
				1	1	1	1	1	A2C12	VP12BY333K	CAP, FXD CERAMIC	.033μF			VITRAMON 5
				1	1	1	1	1	A2C11	2222-801-9635	[illegible]	1-6 pF		400V	MEPCO-ELECTRA

APPROVED F.E.	DATE	APPROVED M.E.	DATE
TITLE RF [illegible]			

ORIGINATOR DWloth	DATE 30Jun77
DWG. NO PL1000162	
SHEET OF	REV R

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
				1	1	1	1	1	[illegible]	1000034-135	TRANSISTOR				[illegible]
				1	1				[illegible]	2N2904	TRANSISTOR				ANY
				1	1	1	1	1	A2Q2	100003[illegible]	TRANSISTOR				[illegible]
				1	1	1	1	1	A2Q1	2N3906	TRANSISTOR				ANY
				1	1	1	1	1	A2L3	023-603-20-26-1-2	INDUCTOR, TOROID				[illegible]
				1	1	1	1	1	A2L2	023-603-20-26-1-2	INDUCTOR, TOROID				[illegible]
				5	5	5	5	5	A2L1	1000643-901	FERRITE CORE				[illegible]
				1	—	—	—	—	A2L6	012-04-0380-A03-36-2	INDUCTOR, AIR				[illegible]
				1	1	1	1	1		[illegible]	[illegible]				[illegible]
				1	1	1		1	A2J1	[illegible]	PIN JACK				CINCH JONES
				—	1	—	—	—	A2C32	[illegible]	CAP, VAR	1-6pF			MEPCO-ELECTRA
				—	—	1	1	1	[illegible]	[illegible]	CAP, TANT	6.8μF		35V	SPRAGUE
									A2C30	[illegible]					
									A2C29	[illegible]					

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE RF BOARD ASSY			

ORIGINATOR DWRoth	DATE 30Jun77
DWG. NO. PL1000964	
SHEET 1 OF	REV P

508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED														
			-	1	-	-	-	A2J1	1000643-101	FERRITE CORE				AR
			2	-	2	2	2		1000643-602	FERRITE CORE				AR
			-	-	-	-	-		LST-125	LOSSY LINE				CAPCON
			AR	16"	AR	-	AR		RG188A/U	CABLE, COAX				
			-	1	-	-	-	A2J1	142-0221-001	CONN, COAX	SMA			EF JOHNSON

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWROTH DATE 10 AUG 77
TITLE RF [illegible] BD/				DWG. NO. PL100016-2
				SHEET 5 OF REV R

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
509	508	507	506	505	504	503	502	501							
				1	1	1	1	1	A1J2	1000962-624	FERRITE CORE				FR
				12"	-	6"	-	6"		LST-125	LOSS LINE				CANADA
				18"	12"	24"	-	24"		RG58A/U	CABLE, COAX				ANY
				1	1	-	-	-		142-0221-201	CONN, COAX	SMA			
				-	-	1	-	-		N-F-21	CONN, COAX	N			
				-	-	-	1	-		UG-1094/U	CONN, COAX	BNC			
				-	-	-	-	1	A2J2	BNC-F-15	CONN, COAX	BNC			COMPUTER CONNECTION ENTERPRISES

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE RF BOARD ASSY			

ORIGINATOR DWROTH	DATE 10 AUG 79
DWG. NO. PL1000962	
SHEET 6 OF	REV R

508	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
				1	–	–	–	–	A2R23		RES. FXD. COMP	330Ω	5%	½W	
									A2R26	NOT USED					
									A2R27	NOT USED					
				1	1	1	1	1	A2R15		RES. FXD. COMP	12Ω	5%	½W	
				1	1	1	1	1	A2R14		RES. FXD. COMP	15Ω	5%	½W	
				1	1	1	1	1	A2R13		RES, FXD, COMP	15Ω	5%	½W	
				1	1	1	1	1	A2R12		RES. FXD. COMP	1.0K	5%	½W	
				–	–	–	–	–	A2R11	NOT USED					
				1	1	1	1	1	A2R10		RES. FXD, COMP	330Ω	5%	½W	
				1	1	1	1	1	A2R9		RES. FXD, COMP	220Ω	5%	½W	
				1	1	1	1	1	A2R8		RES. FXD. COMP	180Ω	5%	1W	
				1	1	1	1	1	A2R7		RES. FXD. COMP	470Ω	5%	¼W	
				1	1	1	1	1	A2R6		RES. FXD. COMP	2.7K	5%	½W	
				1	1	1	1	1	A2R5		RES. FXD. COMP	220Ω	5%	½W	
				1	1	1	1	1	A2R4	4537	RES. FXD. WW	2.4Ω		5W	OHMITE
				1	1	1	1	1	A2R3		RES. FXD. COMP	2.2K	5%	½W	
				1	1	1	1	1	A2R2		RES. FXD. COMP	270Ω	5%	¼W	
				1	1	1	1	1	A2R1	4537	RES. FXD. WW	2.4Ω		5W	OHMITE

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE			

ORIGINATOR DWRoth	DATE 30Jun77
DWG. NO. PL1000962	
SHEET 7 OF	REV P

QUANTITY REQUIRED								ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	APPLICATION OR VENDOR
				1	–	1	–	A						
				1	–	1		C	1000966-101					
				–	–	–	–	D	1000966-101					
				–	–	–	1	E						
				–	–	–	1	F						
				–	–	–	1	G						
				–	–	–	1	H						
				1	–	1	–	J						
				–	–	–	1	K	1000963-101					
								L						
				3	3	3	3	M						
				1	1	1		N						
				–	–	–	–	P						
				1	1	1	1	R						
				1	1		1	S						
				1	1	1	1	T						
				1	1			U						
				1	1	1	1	V						
				1	1	1	1	W						
				1	1	1	1	X						
				1	1	1	–	Y	1001091-101					
								Z						
				1	1		1	AA						
				1	1			BB						
				1	1			CC						
				1	1			DD						
				1	1	1	1	EE		RES, FXD, COMP				

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE			

ORIGINATOR DWKoth	DATE
DWG. NO.	
SHEET 8 OF	REV M

											1000968	SCHEMATIC			A
															B
															C
															D

508	503	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
								1	L2	012-04-03R0-A03-26 2	INDUCTOR, RF				
								1	L1	HAIRPIN BEND US	NOMINAL LEAD OF .5				
								1	J2	[illegible]	CONN, COAX				ANY
								1	J1	[illegible]	CONN, COAX				ANY
								1	C4	2222-[illegible]	CAP, VAR	1-6 pF			MELCO ELECTRA
								1	C3	2222-[illegible]	CAP, VAR	1-6 pF			MELCO-ELECTRA
								1	C2	MT10MA/550	CAP, VAR	5-50pF			MELCO-ELECTRA
								1	C1	HT10KA/218	CAP, VAR	2-18pF			MELCO-ELECTRA

APPROVED R.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DiRon DATE 12 Sept 72
TITLE GAIN EQUALIZER ASSY				DWG. NO. PL1000968
				SHEET 2 OF REV D

QUANTITY REQUIRED									ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
									10						
									9						
									8						
									7						
									6						
									5						
									4						
								1	3	14Y7	TERMINAL				USECO
								1	2	1X2	[illegible]				RANDOLPH CAN
								1	1	1X1X2	DRAWN [illegible] CAN			<2>	[illegible]
								1	R6		[illegible]	27Ω	5%	¼W	
								1	R5		[illegible]	15Ω	5%	¼W	
								1	R4		[illegible]	27Ω	5%	¼W	
								1	R3		[illegible]	27Ω	5%	¼W	
								1	R2		[illegible]	33Ω	5%	¼W	
								1	R1		[illegible]	33Ω	5%	¼W	

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR [illegible] DATE [illegible]
TITLE GAIN EQUALIZER ASSY				DWG. NO. PL1000968
				SHEET 3 OF REV D

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
					REF	REF	REF	REF		1001098	SCHEMATIC				26 [illegible] 78 A
															15 Sep 78 B
															19 Oct 78 C
											OPTIONAL FEATURES INCLUDED				16 Nov 78 D
															11 MAY 79 E
					-	-	-	-			LED INDICATOR CIRCUIT WITH	INTERNAL	LED		14 Aug 79 F
					X	-	X	-			LED INDICATOR CIRCUIT WITH	EXTERNAL	LED		
					-	-	-	-			ADD UP MODE				
					-	-	X	X			EXTERNAL FILTER CAPACITOR				
					-	-	-	-			EXTERNAL DIODES				
					-	-	-	-			EXTERNAL VOLTAGE ADJUST				
					-	-	-	-			DUAL INTERNAL VOLTAGE ADJUST				
					-	-	X	X			BRACKET MTG				
					X	-	X	-			CURRENT LIMIT, HI RANGE				
					-	X	-	X			CURRENT LIMIT, LO RANGE				
										5	D	NOT PART OF MANUAL			
										4	B				
										3	F				
										2	C				
										1	F				
										SHEET	REV				

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWRoth	DATE 20 Jun 78
TITLE REGULATOR ASSY MULTI-PURPOSE LOW VOLTAGE				DWG. NO. PL1001097	
				SHEET 1 OF 5	REV F

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
					1	–	1	–	CR3	IN4448	DIODE				ANY
					1	1	1	1	CR2	IN4720	DIODE				ANY
					1	1	1	1	CR1	IN4720	DIODE				ANY
					1	1	1	1	C5	TYA-1304	CAP, FXD, ELEC	10uF		50V	SPRAGUE
					1	1	1	1	C4	5815-000Y5U209Z	CAP, FXD, CERAMIC	0.2uF		25V	ERIE
									C3						
									C3						
									C3						
									C3						
					1	1	–	–	C3	TYA 1318.3	CAP, FXD, ELEC	2500uF		50V	SPRAGUE
					1	1	1	1	C2	TCD104E	CAP, FXD, CERAMIC	0.1uF		50V	ARCO
					1	1	1	1	C1	TCD104Z	CAP, FXD, CERAMIC	0.1uF		50V	ARCO

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE REGULATOR ASSY			
MULTI-PURPOSE LOW VOLTAGE			

ORIGINATOR DWRoth	DATE 20Jun78
DWG. NO. PL1001097	
SHEET 2 OF	REV C

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
					1	—	1	—	R9	TYPE BWH	RES, FXD, WW	0.27Ω		2W	
					—	1	—	1	R9	TYPE BWH	RES, FXD, WW	0.68Ω		2W	
					—	—	—	—	R8	TYPE BWH	RES, FXD, WW	0.33Ω		2W	
					—	—	—	—	R7	U201R103B	RES, VAR	10K		¼W	CTS
					—	—	—	—	R7	RV6LAYSA103A	RES, VAR	10K		¼W	ANY
					—	—	—	—	R6		RES, FXD, COMP	15K	5%	¼W	
					1	1	1	1	R6	AWG 22	JUMPER WIRE				
					1	1	1	1	R5		RES, FXD, COMP	1.8K	5%	¼W	
					1	1	1	1	R4		RES. FXD, COMP	820Ω	5%	¼W	
					1	1	1	1	R3	U201R103A	RES, VAR,	10K		¼W	CTS
					1	1	1	1	R2	U39	RES, VAR	1.5Ω			CLAROSTAT
					1	—	1	—	R1		RES, FXD, COMP	2.7K	5%	1W	
					—	—	—	—	DS1	5082-4160	LED INDICATOR	RED PC BRD MT			HP

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE REGULATOR ASSY MULTI-PURPOSE [illegible] VOLTAGE			

ORIGINATOR DWRath	DATE 20 Jun 78
DWG. NO. PL1001097	
SHEET 3 OF	REV F

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
									10						
									9						
									8						
									7						
									6						
					—	—	1	1	5	1001099-101	BRACKET, MTG				AR
									4						
									3						
									2						
					1	1	1	1	1	1001096-101	PC BOARD				AR
					1	—	1	—	VR1	IN5236B	ZENER DIODE	7.2V			ANY
					1	—	1	—	U1	L200V(Y)	INTEGRATED CKT				SGS △1
					—	—	—	1	U1	L200V(O)(Y)	INTEGRATED CKT				SGS △1
					—	1	—	—	U1	L200V(R)(O)(Y)	INTEGRATED CIRCUIT				SGS △1

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE REGULATOR ASSY MULTI-PURPOSE LOW VOLTAGE			

ORIGINATOR DWRoth	DATE 20Jun78
DWG. NO. PL1001097	
SHEET 4 OF	REV B

															A	19 OCT 78
															B	28 JUN 79
															C	3 JUL 79
															D	14 AUG 79
							REF	REF		1001132	SCHEMATIC				E	21 DEC 79

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
							1	1	Q2	2N5061	SCR				ANY
									Q1	NOT USED					
							1	-	J1	450-3286-003	PIN JACK				CAMBION [3]
							1	1	CR3	IN5061	DIODE				ANY
							1	1	CR2	IN4448	DIODE				ANY
									CR1	NOT USED					
							1	-	C6	FP3-50	CAP, FEED-THRU			[1]	TEXAS-SPECTRUM
							1	-	C5	FB2B	CAP, FEED-THRU			[1]	METUCHEN
							1	-	C4	FP3-50	CAP, FEED-THRU			[1]	TEXAS-SPECTRUM
							1	-	C3	FP3-50	CAP, FEED-THRU			[1]	TEXAS-SPECTRUM
							1	1	C2	CK60BX101K	CAP, FXD CER	100PF			ANY
							1	1	C1	5815-000Y5U1042	CAP, FXD CER	0.1μf		25V	ERIE

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
ORIGINATOR D.W. ROTH		DATE 18 SEP 78	
TITLE PROTECTION CIRCUIT ASSY		DWG. NO. PL1001134	
		SHEET 2 OF	REV E

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL.	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
							1	1	R14		RES, FXD COMP	1K	5%	1/4W	
									R13	NOT USED					
							1	1	R12	U201R104B	RES, VAR	100K		1/4W	
							1	1	R11		RES, FXD COMP	100K	5%	1/4W	
							1	1	R10		RES, FXD COMP	68Ω	5%	1/4W	
							1	1	R9		RES, FXD COMP	2.7Ω	5%	1W	
							1	1	R8		RES, FXD COMP	2.2K	5%	1/2W	
									R7	NOT USED					
									R6	NOT USED					
							1	1	R5		RES, FXD COMP	1M	5%	1/4W	
							1	1	R4		RES, FXD COMP	10K	5%	1/4W	
									R3	NOT USED					
									R2	NOT USED					
							1	1	R1		RES, FXD COMP	2.2K	5%	1/4W	

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR D.W. ROTH	DATE 13 SEP 78
TITLE [illegible] Control Assy				DWG. NO. PL100113-4	
				SHEET 3 OF	REV E

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
							4	–	6	1000643-401	CORE				AR 2
							2	–	5	1410-10	LUG, GND #10				H.H. SMITH
							1	–	4	1001335-102	SHIELD				AR
							1	–	3	1001335-101	BRACKET, MTG				AR
							–	1	2	1001099-101	BRACKET, MTG				AR
							1	1	1	1001133-101	PRINTED WIRING BD				AR
							1	1	XU1	8ICS	SOCKET, I.C.	8 PIN			CINCH-JONES
							1	1	VR1	IN5234B	DIODE, ZENER				ANY
							1	1	U1	CA3130T	INTEGRATED CKT				RCA
							1	–	R16		RES, FXD COMP	10.0Ω	5%	1/4W	
							1	1	R15	U2.1D-023.5	RES, VAR	1K		1/4W	

AMPLIFIER RESEARCH	APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR D.W. ROTH / DATE 18 SEP 78
	TITLE PROTECTION CIRCUIT ASSY				DWG. NO. PL1001134
					SHEET 4 OF REV E

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED								MODEL 10W1000							
										3	–	NOT PART OF MANUAL			
										2	–				
										1	–				
										SHEET	REV				

AMPLIFIER RESEARCH	APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWROTH DATE 28JUN77
	TITLE [illegible]				DWG. NO. PL1001203
					SHEET 1 OF 3 REV --

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
									10						
									9						
									8						
									7						
									5						
									4						
									3						
								/	2	HU-5365	COVER, INSIDE, STEEL, HOT TIN DIP				HUDSON
								/	1	HU-5365 X .750	CAN, STEEL, HOT TIN DIP				HUDSON
								1	R2		RES. FXD, COMP	100Ω	5%	1/4W	
								1	R1		RES. FXD, COMP	51Ω	5%	1/4W	
								1	P1	KC52H52	CONN, COAX	BNC			KINGS
								1	CR1	IN920	DIODE				ANY
								1	C1	FASC	CAP, FEEDTHRU	470pF			ALLEN BRADLEY

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE DETECTOR ASSY			

ORIGINATOR DWROTH	DATE 28JUN79
DWG. NO. PL1001203	
SHEET 2 OF	REV —

										1001208	SCHEMATIC			A	14AUG 79
														B	27DEC 79
										5	–				
										4	B				
										3	B				
										2	–				
										1	B				
										SHEET	REV				
509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL.	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
ORIGINATOR DWROTH		DATE 11JUL79	
TITLE PS & HOUSING ASSY 7" CABINET / BACK		DWG. NO. PL1001209	
		SHEET 1 OF 5	REV B

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
								1	XF1	342001	FUSEHOLDER				LITTLEFUSE
								1	T2	1001066-101	TRANSFORMER				
								1	T1	1001065-101	TRANSFORMER				
								1	S3	MSPS-103C	SWITCH, 3PMC				ALCOSWITCH
								1	S2	46256LFH	SWITCH, 115/230				SWITCHCRAFT
								1	S1	LT36K50-1L-WH-RC-A	SWITCH, LINE				CARLING ELECTRIC
								14	J1	02-09-1118	PIN, FEMALE				WALDOM
								1	J1	03-09-1151	SHELL, MALE	15 PIN			WALDOM
								1	FL1	6EF1	FILTER, LINE				
								AR	F1	FUSE (230V)				250V	ANY
								AR	F1	FUSE (115V)				250V	ANY
								1	DS2	5082-4855 5082-4707	LED & MTG KIT	RED			HP
									DS1		PART OF S1				
								1	C1	CGS752V040R4C	CAP, FXD, ELEC	7500uF		40V	MALLORY
								1	B2	MS2107T	FAN	115 VAC			IMC
								1	B1	MS2107F	FAN	115 VAC			IMC

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE	ORIGINATOR DWROTH	DATE 11 JUL 79
TITLE PS & HOUSING ASSY 7" CABINET / RACK				DWG. NO. PL1001209 SHEET 2 OF	REV -

QUANTITY REQUIRED	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
1	W2	KC-59-152	CONN. COAX	BNC			KINGS
1	W2	KC-59-152	CONN, COAX	BNC			KINGS
8"	W2	RG-188A/U	CABLE, COAX				ANY
8"	W2	LST-125	LOSSY LINE				CAPCON
1	W1	N-F-21	CONN. COAX	N			COMPONENT ENTERPRISES
1	W1	KC-59-152	CONN. COAX	BNC			KINGS
8"	W1	RG-188A/U	CABLE, COAX				ANY
1	W1	1000643-622	FERRITE CORE				AR
8"	W1	LST-125	LOSSY LINE				CAPCON
1	A4	1001209-501	[illegible] ASSY				AR
1	A5	[illegible]-501	GAIN EQUALIZER				AR
1	A4	DEC-1010B	DIRECTIONAL COUPLER	10db			ENGLEMANN
1	A3	1001097-501	REGULATOR ASSY				AR
1	A2	1001134-502	PROTECTION CKT ASSY				AR
1	A1	1001097-502	REGULATOR ASSY				AR

509 508 507 506 505 504 503 502 501

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
ORIGINATOR D.W. ROTH		DATE 11 JULY 79	
TITLE P.S. & HOUSING ASSY 7" CABINET/RACK		DWG. NO. PL1001209	
		SHEET 3 OF	REV B

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
								1	W4	1000643-622	FERRITE CORE				AR
								1	W4	1000643-101	FERRITE CORE				AR
								9½"	W4	AWG #22 (SHIELDED)	WIRE				
								4½'	W4	LST-125	LOSSY LINE				CAPCON
								1	W3	1000643-622	FERRITE CORE				AR
								1	W3	142-0221-001	CONN, COAX	SMA			E.F. JOHNSON
								1	W3	N-F-21	CONN, COAX	N			COMPONENT ENTERPRISES
								11½"	W3	RG-[illegible]	CABLE, COAX				ANY
								11½"	W3	LST-[illegible]	LOSSY LINE				CAPCON

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE P.S. & Housing Assy 7" Chassis/Rack			

ORIGINATOR D.W. RITH	DATE 11 JUL 79
DWG. NO. PL1001209	
SHEET 4 OF	REV B

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
									25						
									24						
								2	23	4511-137-100-2C	CLIP, CAP MTG				SEASTROM
									22						
									21						
									20						
								1	19	1001111-103	PANEL, TRIM				
								1	18	1001111-102	CHANNEL, TRIM				
								1	17	1001111-301	PANEL ASSY				
									16						
								1	15	1001071-101	SUPPORT, CONN				
								1	14	1000249-101	NAMEPLATE				
								2	13	1000132-101	SCREEN, FAN				
								2	12	1001206-101	BUMPER, SUPPORT				
								1	11	1001137-102	BRACE, SUPPORT				
								1	10	1000949-101	ANGLE, SUPPORT				
									9						
								1	8	1001112-107	COVER, BOTTOM				
								1	7	1001112-105	COVER, TOP				
									6						
									5						
								1	4	1001112-101	PANEL ASSY, REAR				
								2	3	1001112-104	PANEL, SIDE, L&R				
								1	2	1001112-102	PANEL, FRONT				
								1	1	1001112-101	PLATE, MTG				

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE PS & HOUSING ASSY 7" CABINET / RACK			

ORIGINATOR DWROTH	DATE 11JUL79
DWG. NO. PL1001209	
SHEET 5 OF	REV -

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
														A	27 Dec 79
								REF		1001212	SCHEMATIC				

509	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
									5						
									4						
									3						
									2						
								1	1	1001202-301	HEAT SINK				AR
								1	W1		CABLE ASSY				AR ▷1
								1	P1	03-09-2151	SHELL, FEMALE				
								14	P1	02-09-2118	PIN, MALE				
								1	A6	1001207-101	PWR CMBNR				AR
								1	A5	1001207-101	PWR SPLTTR				AR
								4	A1-A4	1001097-504	REGULATOR ASSY				AR
								4	A1-A4	1000962-504	RF BOARD ASSY				AR

AMPLIFIER RESEARCH

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE RF ASSY (A2)			

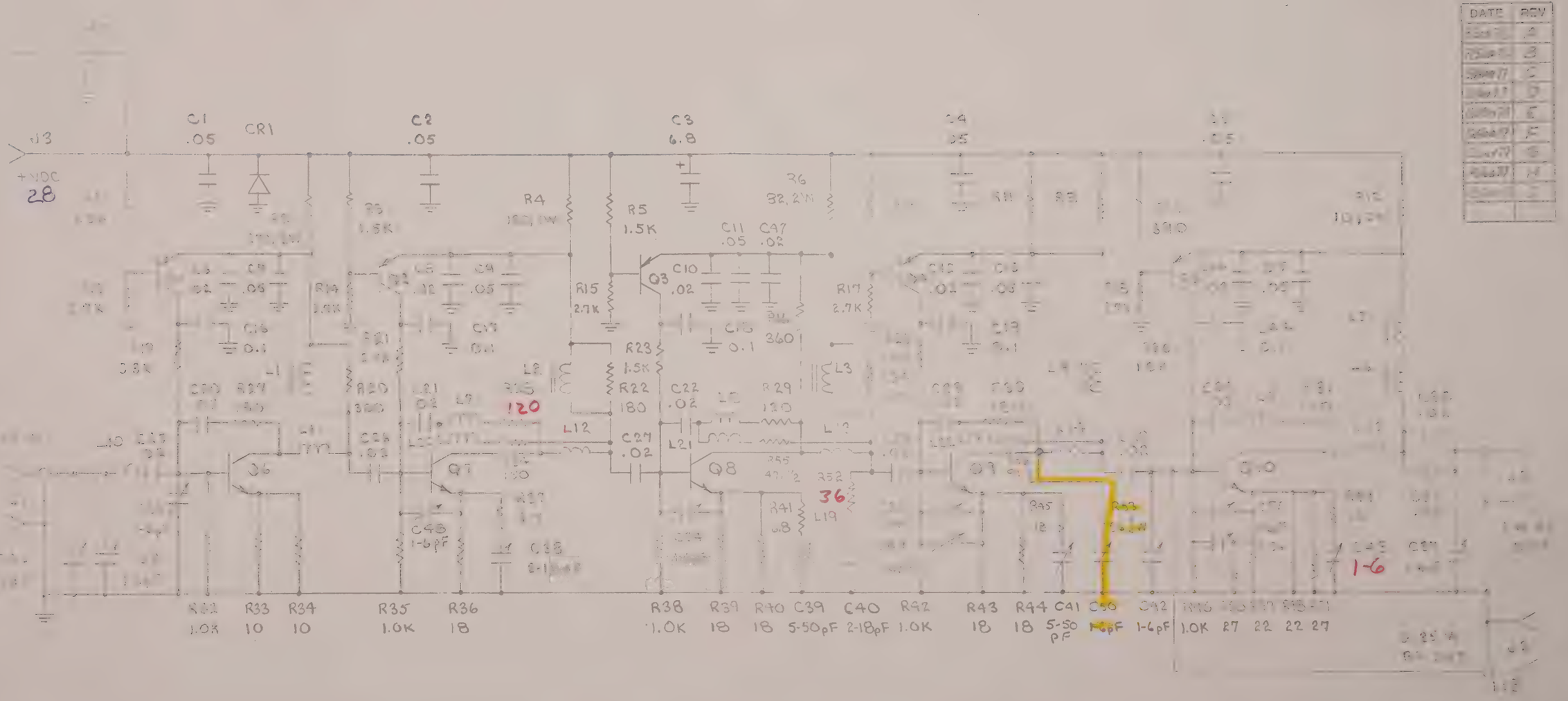
ORIGINATOR DWROTH	DATE 12 JUL 99
DWG. NO. PL1001213	
SHEET 2 OF	REV A

505	508	507	506	505	504	503	502	501	ITEM OR SYMBOL	PART NO.	DESCRIPTION	VALUE	TOL	RATING	SPECIFICATION OR VENDOR
QUANTITY REQUIRED															
							--	1	10	E-071916H	CASE WITH PERFORATED BOTTOM				OPTIMA
									9		SEMIGLOSS SEPIA COLOR NO				
									8		24091 PER MIL-STD-595			WITH	
									7		MEDIUM TEXTURE				
									6						
									5						
							1	1	4	1001324-101	[illegible]				
							1	1	3	1001209-501	[illegible]				
							1	1	2	1000962-505	RF BOARD ASSY				
							1	1	1	1001213-501	RF HEAT				

APPROVED E.E.	DATE	APPROVED M.E.	DATE
TITLE [illegible]			
ORIGINATOR DuROTH	DATE [illegible]		
DWG. NO. PL 1001213			
SHEET 1 OF 1	REV -		

SECTION VI

SCHEMATICS



DATE	REV
	A
	B
	C
	D
	E
	F
	G
	H
	J

NOTES:

1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE
CAPACITOR VALUES ARE FARADS

2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE ASSEMBLIES. SEE APPROPRIATE PARTS LIST FOR FINAL COMPONENT VALUES.

REFERENCE DESIGNATIONS

LAST USED	NOT USED
C51	
CR1	L16
J3	L17
L22	L18
Q10	
R56	

ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
QTY. REQD.		PARTS LIST			

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.(
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010.

DRAWN DWROM
DATE 20APR96
CHKD
DATE
MFG
DATE
ENG
DATE

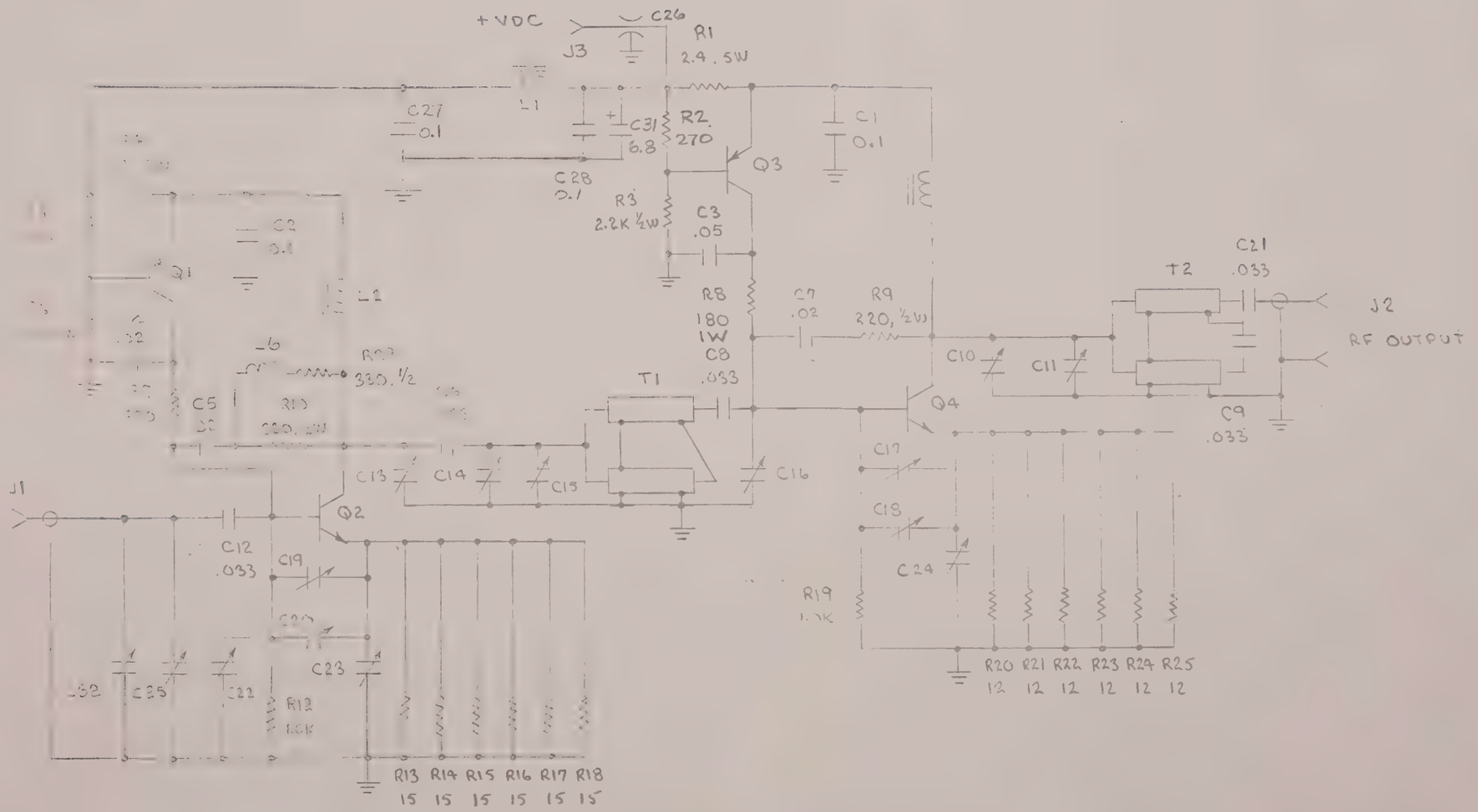
SCHEMATIC

DWG NO 1000872 J

SHEET 1 OF 1

UJ1000, 1WJ1000, 4WJ1000, 10WJ1000

18 Nov 77	A
23 May 78	B
12 SEPT 78	C
18 Sep 78	D
19 Oct 78	E
28 Jun 79	F
12 Jul 79	G
14 Aug 79	H



NOTES

1.0 UNLESS OTHERWISE SPECIFIED:
1.1 CAPACITOR VALUES ARE MICROFARADS
1.2 VARIABLE CAPACITORS ARE 1-6 PF
1.3 RESISTOR VALUES ARE OHMS
1.4 RESISTOR RATINGS ARE 1/4 WATT

2.0 THIS SCHEMATIC IS USED TO REPRESENT MORE THAN ONE ASSY. WHERE COMPONENT VALUES ARE NOT SHOWN REFER TO APPROPRIATE PARTS LIST

REFERENCE LAST	DESIGNATIONS NOT USED
C29 Q4	C27, C30
R29	R11, R26, R27 R28
J3 T2	L4, L5
L6	

QTY. REQD.	PART NO.	DESCRIPTION	MARK	FIN	MATL
	PARTS LIST				

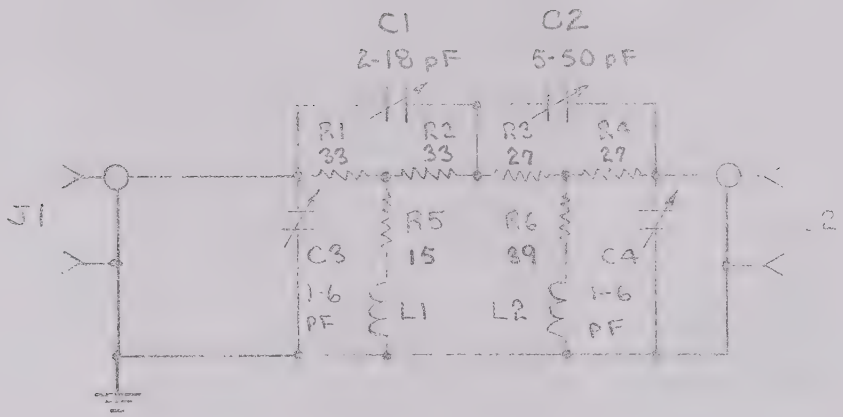
UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010.

DRAWN Duke 78
DATE 29Jun77
CHKD
DATE
APVD
DATE

[redacted]

SCHEMATIC
RF BOARD ASSY

SIZE B
DWG. NO. 1000961
SCALE NONE
SHEET 1 OF 1



NOTES

1.0 UNLESS OTHERWISE SPECIFIED

1.1 RESISTOR VALUES ARE OHMS

1.2 RESISTOR RATINGS ARE 1/4 WATT

REFERENCE LAST USED	DESIGNATORS NOT USED
C4	L2
J2	R6

ITEM	PART NO.	DESCRIPTION	MARK	FIL
QTY. REQD.	PARTS LIST			

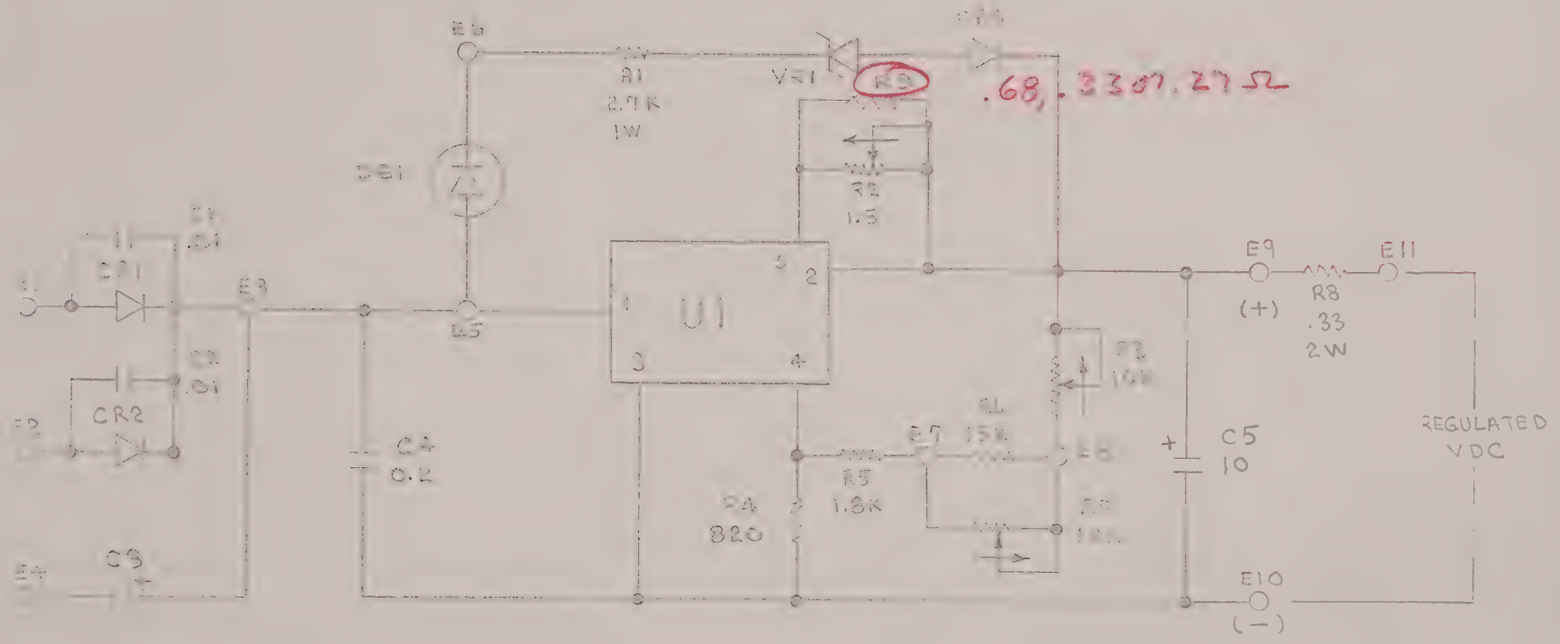
UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010.

DRAWN
DATE 30Jun77
CHKD
DATE
MECH
DATE
ENGR
DATE

SCHEM

NONE SHEET 1

DATE	REV



LOW LEVEL — 28.0 VDC
DRIVER — 27.0 VDC
FINALS — 27.5 VDC

NOTES

1.0 UNLESS OTHERWISE SPECIFIED
1.1 CAPACITOR VALUES ARE MICROFARADS
1.2 RESISTOR VALUES ARE OHMS
1.3 RESISTOR RATINGS ARE 1/4 WATT

2.0 THIS SCHEMATIC IS USED TO REPRESENT MORE THAN ONE ASSY. WHERE COMPONENT VALUES ARE OMITTED SEE APPROPRIATE PARTS LIST TO DETERMINE VALUE

REFERENCE DESIGNATIONS LAST USED	NOT USED
C5	R9
CR3	U1
DS1	VR1
E11	

QTY. REQD.	ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010.

GEN USE
USED ON MODEL

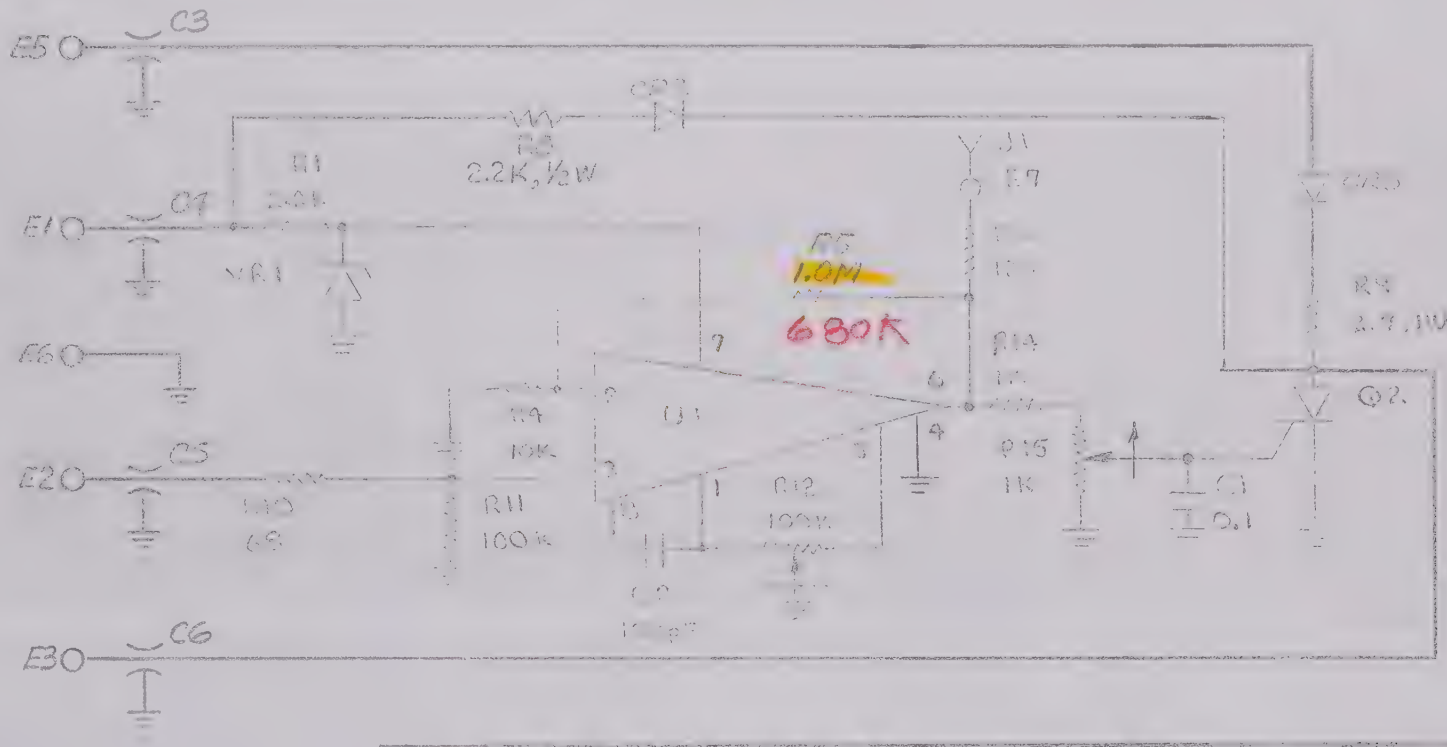
DRAWN DWRoth
DATE 19Jun78
CHKD
DATE
MECH
DATE
ELEC
DATE

AMPLIFIER RESEARCH

SCHEMATIC
REGULATOR MPLY

DWG. SCALE NONE
DWG. NO. 1001093
REV.
SHEET 1 OF 1

A1



DATE	REV
19OCT78	A
28JUN79	B
3JUL79	C
	D
	E

NOTES

1.0 UNLESS OTHERWISE SPECIFIED

1.1 CAPACITOR VALUES ARE IN MICROFARADS

1.2 RESISTOR VALUES ARE IN OHMS

1.3 RESISTOR RATINGS ARE ¼ W

REFERENCE DESIGNATORS

USED	NOT USED
R16 Q2	C1, CR1

4

03.16.07

ITEM	QTY. REQD.	PART NO.	DESCRIPTION
		PARTS LIST	

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.

DRAWN
DATE
CHKD
DATE
MECH
DATE
ELEC
DATE

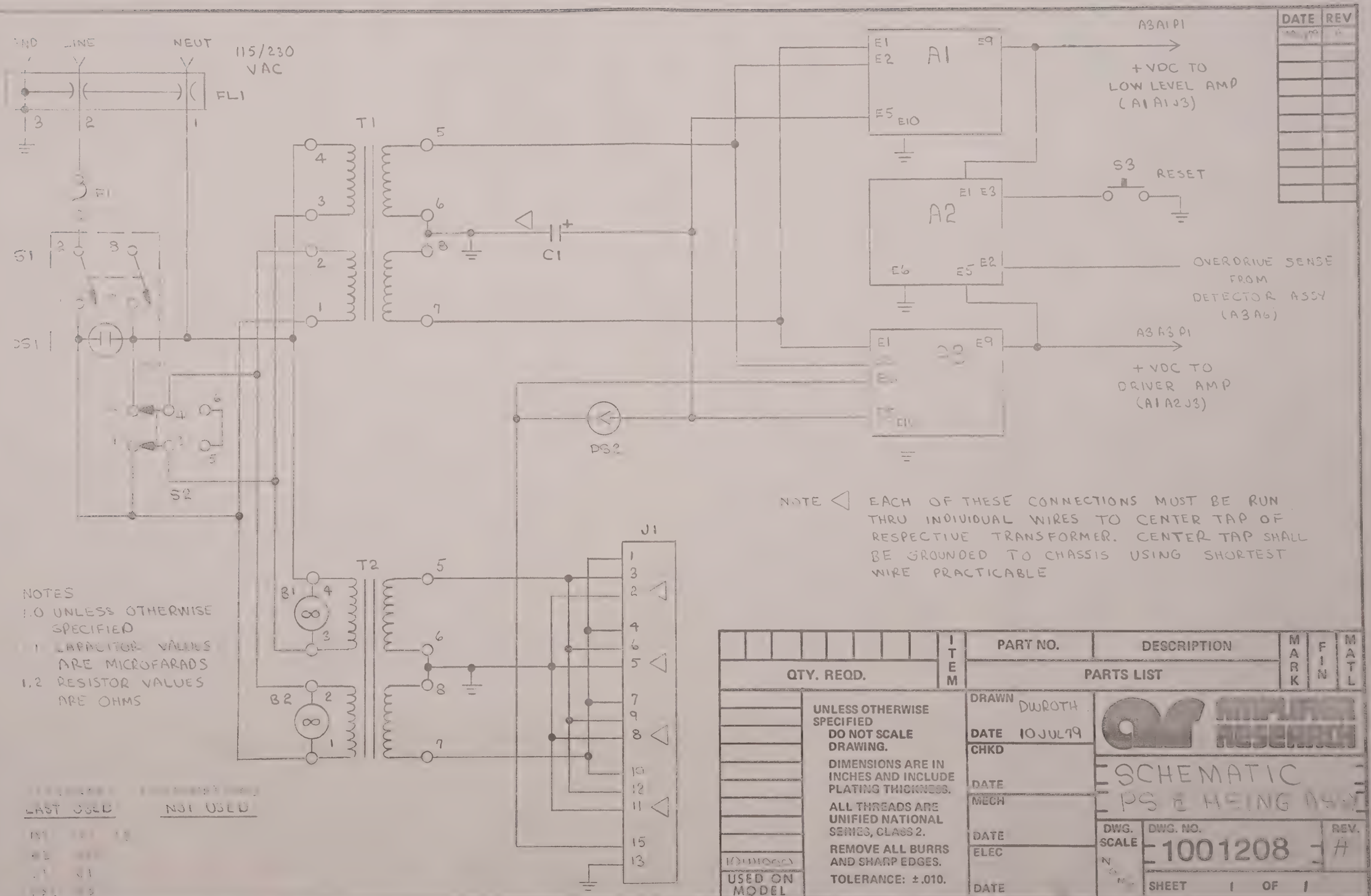
SCHEMATIC
PROTECTION CKT

DWG. SCALE: NONE

DWG. NO. 1001132

SHEET 1

A2



DATE	REV

NOTES
1.0 UNLESS OTHERWISE SPECIFIED
1.1 CAPACITOR VALUES ARE MICROFARADS
1.2 RESISTOR VALUES ARE OHMS

LAST USED	NOT USED

QTY. REQD.	ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010.

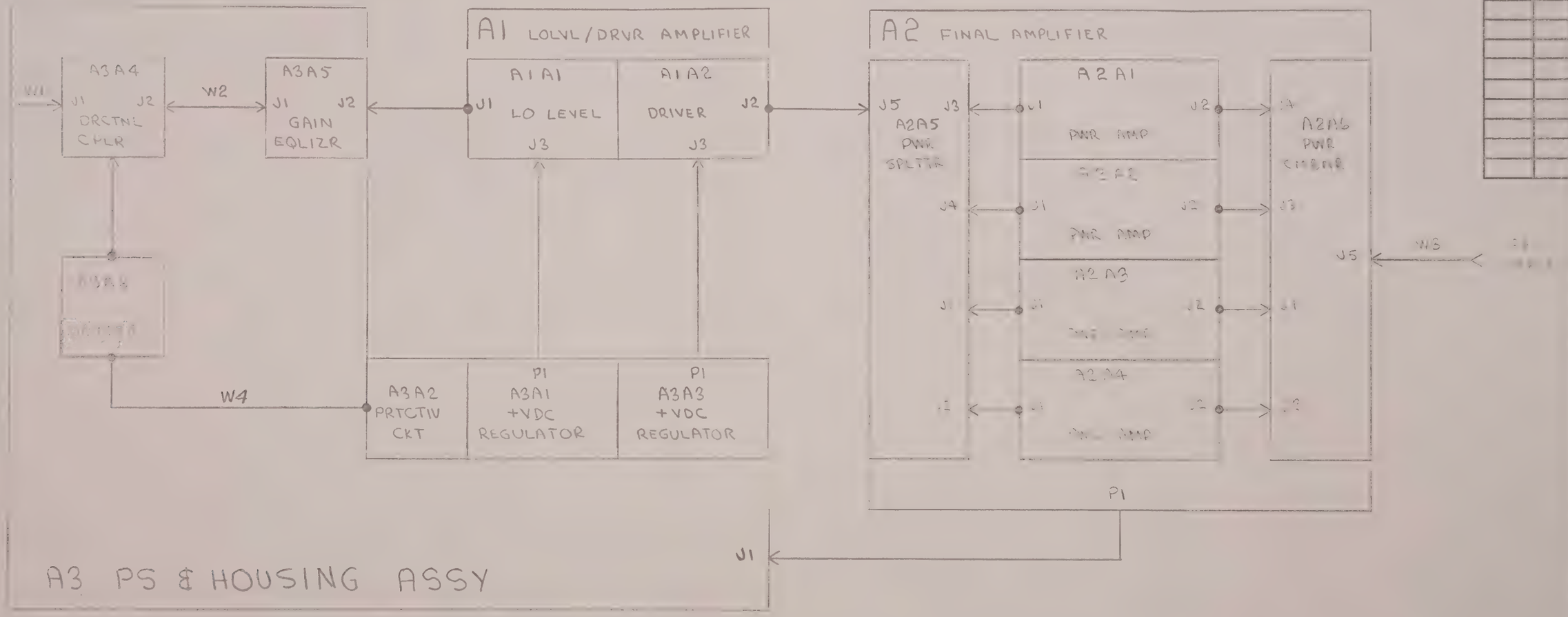
USED ON MODEL

DRAWN DWROTH
DATE 10JUL79
CHKD
DATE
MECH
DATE
ELEC
DATE

MPB TECHNOLOGIES INC.

SCHEMATIC
PS & WIRING ASSY

DWG. SCALE NONE
DWG. NO. 1001208
REV. A
SHEET 1 OF 1



DATE	REV

ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
QTY. REQD.	PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010.

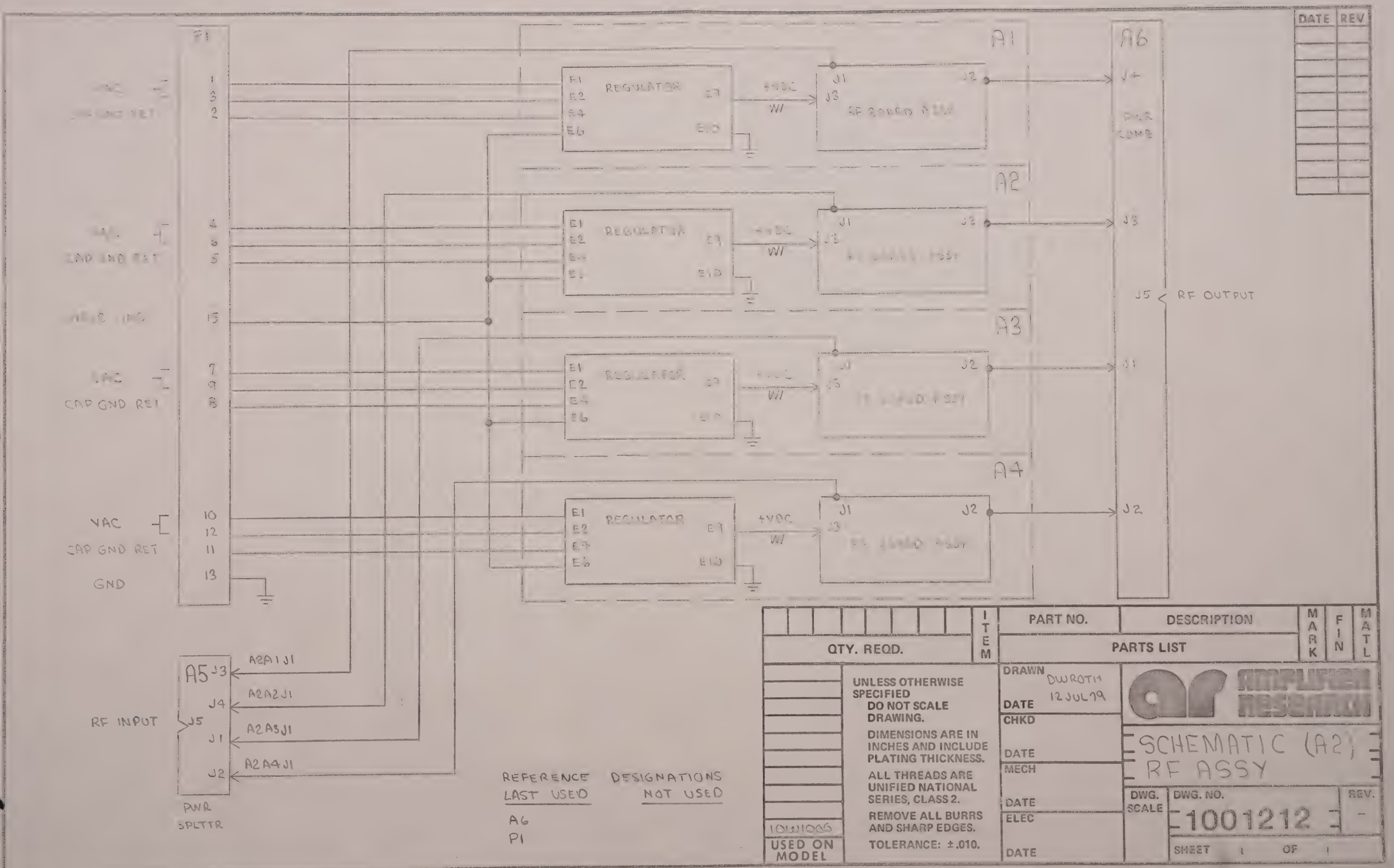
USED ON MODEL: 10W1000

DRAWN DWROTH DATE 11JUL19
CHKD DATE
MECH DATE
ELEC DATE

AMPLIFIER RESEARCH

BLOCK DIAGRAM
MODEL 10W1000

DWG. SCALE NONE
DWG. NO. 1001211
REV. -
SHEET 1 OF 1



DATE	REV

REFERENCE DESIGNATIONS

LAST USED	NOT USED
A6	
P1	

QTY. REQD.	ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

10W1005
USED ON MODEL

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING.
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS.
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2.
REMOVE ALL BURRS AND SHARP EDGES.
TOLERANCE: ±.010.

DRAWN DWROTH DATE 12JUL79
CHKD DATE
MECH DATE
ELEC DATE

ar AMPLIFIER RESEARCH

SCHEMATIC (A2); RF ASSY

DWG. SCALE

DWG. NO. 1001212

REV. -

SHEET 1 OF 1

WARRANTIES: LIMITATION OF LIABILITY

Seller warrants (i) that seller has title to the goods sold and (ii) that the goods will be free from defects in material and workmanship for a period of one year after receipt by buyer. Seller's sole responsibility in fulfilling these warranties shall be to repair or replace any goods which do not conform to the foregoing warranties or, at seller's option, to give buyer credit for defective goods, provided such defective goods are returned Prepaid to Amplifier Research, within the warranty period.

THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS, SELLER SHALL NOT BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM ANY BREACH OF WARRANTY.

No person has any authority to bind seller to any affirmation, representation or warranty except as specifically included in these written terms and conditions.

AMPLIFIER RESEARCH

MODEL NO. 10W1000
SERIAL NO. 1863
TESTED BY [illegible]
DATE 4/30/80

TEST DATA SHEET

FREQ (MHZ)	POWER OUTPUT @ 1dB COMPRESSION (WATTS)	POWER OUTPUT SATURATED (WATTS) @ -3 dBm INPUT
1	12	20
5	22	32
10	18	29
50	17.6	24
100	14.2	23
200	16.2	27
300	18.4	29
400	14.6	25
500	10.6	12.5
600	12.0	14.5
700	10.0	10.7
800	10.0	13.5
900	11.6	15.4
1000	8.2	10.4

GAIN (0.1 WATT OUTPUT AND 500 MHz) 47 dB.

FLATNESS ± 1.5 db

OPEN TEST Voh

SHORT TEST Voh

STABILITY Voh 1Km/m

DISTORTION Voh

INPUT VSWR 2.0:1.0

OUTPUT VSWR —

160 SCHOOL HOUSE ROAD
SOUDERTON, PA. 18964

PHONE: 215-723-8181

1000892